DFR
2/15/2001

Privileged and Confidential

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

REPORT

PHASE I ENVIRONMENTAL SITE ASSESSMENT AND ASBESTOS SURVEY

OUTBOARD MARINE CORPORATION LAKEFRONT PROPERTY WAUKEGAN, ILLINOIS

FOR
OUTBOARD MARINE CORPORATION

Job No. 45640-001-007
June 28, 2000

K:\OB\OMC\REPORTS\Phase_I.doc

URS

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

REPORT
PHASE I ENVIRONMENTAL SITE ASSESSMENT AND ASBESTOS SURVEY OUTBOARD MARINE CORPORATION LAKEFRONT PROPERTY WAUKEGAN, ILLINOIS FOR OUTBOARD MARINE CORPORATION

EXECUTIVE SUMMARY

URS Corporation (URS) was retained by Outboard Marine Corporation (OMC) to perform a Phase I Environmental Site Assessment (ESA) of its entire lakefront property located in Waukegan, Lake County, Illinois. This property includes both OMC's corporate headquarters, North American Engine Operations (NAEO) headquarters, Product Development Center (PDC), and manufacturing facilities. The scope of work also included a facility-wide asbestos survey.

The OMC Waukegan Lakefront property consists of approximately 124 acres with five separate buildings. These are referred to as Plant 1, Plant 2, Information Technology, Corporate Headquarters, and the Environmental Health and Safety buildings. Portions of OMC owned property are not presently in active use.

Plant 1
339,
ft²

The Plant 1 building, which was constructed in several phases between 1927 and 1971, is used for manufacturing operations, the PDC, and NAEO corporate office staff. Current manufacturing operations conducted in Plant 1 include aluminum and cast iron machining, electro-less tin plating, electrodeposition painting and wastewater treatment. Prior to 1985, this building was used for final assembly of outboard motors and stern drive motors. These activities, carried out at various locations throughout the building, included spray painting, printing, vapor degreasing with chlorinated solvents, chromate conversion coating and engine testing. Prior to the 1950s, die casting and electroplating were also conducted in Plant 1. The PDC activities include engine testing and machining, spray painting, wastewater treatment, and boathouse operations. The land area occupied by this building is approximately 339,000 square feet.

Plant 2
1,036,0

The Plant 2 building, which was constructed in several phases between 1949 and 1975, is used for manufacturing operations, including aluminum melting and holding, aluminum die casting, aluminum machining, polishing and finishing, spray painting, assembly, parts washing, chromate conversion coating, printing, and wastewater treatment. Activities that were previously conducted in Plant 2 include vapor degreasing, solvent distillation, coolant reclamation, aluminum scrap processing, and electroplating. The land area occupied by this building is approximately 1,036,000 square feet.

Two sets of tunnels are present beneath Plant 2, referred to as the western tunnels and the eastern tunnels. The eastern tunnels were observed to be of sound integrity and relatively dry. These underlie the present die casting machines. The western set is no longer in use, since all die casting operations have been moved to the eastern end of Plant 2. Historically, the die casting machines held a polychlorinated biphenyl (PCB) fluids in the hydraulic sump associated with each machine. Minor amounts of oils containing PCBs were released during operation of the machines. Some of these fluids entered the subslab piping within the concrete tunnels in the western end of the building, and are believed to have contributed to the Waukegan Harbor Superfund site PCB-contaminated sediment problem. The piping networks within the western tunnel system ceased use in 1975 when the die cast machines were relocated to the eastern end of Plant 2. The tunnels and associated piping beneath the western end of Plant 2 were never formally decommissioned or decontaminated. However, the north and south sections of storm sewer which extended out into the parking lot areas beyond the limits of the Plant 2 building were decommissioned in 1977 by removing a section of the piping and removing the soils in the immediate vicinity.

The Information Technology building was constructed by OMC in 1975 after purchasing the Coke Plant site (see below). The land area occupied by this building is 20,000 square feet.

The Corporate Headquarters building was constructed in 1958, and houses the corporate office for OMC. This building is adjacent to Plant 2. The land area occupied by this building is approximately 18,000 square feet.

The Environmental Health and Safety (EH&S) building was constructed in 1927. The building was formerly used in conjunction with administrative aspects of the Coke Plant operations that were conducted on the site (see below). The land area occupied by this building is approximately 2,900 square feet.

The OMC lakefront property includes the Waukegan Manufactured Gas and Coke Plant (Coke Plant) site which is being treated as a Superfund site; OMC purchased the Coke Plant site land in 1969 and 1972. The property also encompasses a portion of, and is adjacent to, the Waukegan Harbor Superfund site. OMC also sublets a portion of its property (81,500 square feet on the Coke Plant site) to Larsen Marine for boat storage.

The following recognized environmental conditions were identified as a result of the Phase I ESA:

- The Waukegan Harbor Superfund Site, particularly the East and West Cells and former Slip 3, are considered a recognized environmental condition since these features are located on land owned by OMC, and since high concentrations of PCBs remain in place within the three cells as prescribed in USEPA's Record of Decision (ROD).

- The Coke Plant Site is considered a recognized environmental condition since it is owned by OMC.

- Chlorinated groundwater impacts have been identified that appear to emanate from the central portion of Plant 2, and consequently present a recognized environmental condition. TCE and its daughter products have been detected in site groundwater at concentrations exceeding the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO) Class I groundwater remediation objectives, and free product was observed in one sample.

- Former underground storage tanks (USTs) Nos. 1.1 through 1.8, 2.1 through 2.6, 2.7 through 2.11, and 2.40 through 2.46 present a recognized environmental condition due to documented soil and/or groundwater impacts for which IEPA closure has not yet been sought or obtained, or for which no soil testing was conducted at the time the tanks were removed or abandoned in place.

- The tunnels beneath the western end of Plant 2 are a recognized environmental condition due to the historic use of PCB fluids in the die cast machinery in this area. The presence of PCB sediment contamination has been documented in the former Crescent Ditch, the former Oval Lagoon, and Waukegan Harbor, and are believed to have originated in conjunction with the die casting equipment while it operated in Plant 2's western end. The Crescent Ditch, Oval Lagoon and Waukegan Harbor were all remediated in conjunction with the Waukegan Harbor Superfund site. Although the north and south exits of these tunnels have been cut off beyond the limits of the Plant 2 building and remediated as part of the Waukegan Harbor Superfund cleanup activities, the tunnels themselves (beneath the building) were never cleaned or decommissioned.

- The floor drain network beneath Plant 1 is a recognized environmental condition due to its age and historic operations in Plant 1. The floor drain network was constructed of vitreous clay pipe in 1927 during the initial building of the Plant. At that time, this system discharged directly to the harbor. In the late 1940's, the discharge from this system was rerouted to the North Shore Sanitary District. Historic operations in Plant 1 have included painting, electroplating, degreasing, and other chemical-intensive operations. Most of the floor drains in Plant 1 were plugged in the mid-1990s.

- Most of the site soils impacted with PCBs at concentrations greater than 50 ppm were addressed as part of the Waukegan Harbor Superfund cleanup activities. However, three areas that were not included, and where PCB soil impacts with concentrations greater than 50 ppm may still exist, are considered a recognized environmental condition. These include (1) in proximity to former UST Nos. 2.43 through 2.46 (identified in the prior UST recognized environmental condition); (2) near the former aboveground storage tank (AST) area north of Plant 2 in the parking lot; and (3) near former UST Nos. 2.1 through 2.6 (identified in the prior UST recognized environmental condition).

- Three areas on site where historic metal "chips" management activities occurred are a recognized environmental condition, since indications of extensive soil staining were noted. These chips, essentially oil-covered scrap shavings, were managed outdoors in hoppers or concrete bins, and some of the oils appear to have leaked onto the ground. These three areas are near former UST Nos. 2.40 through 2.42, Nos. 2.43 through 2.46, and north of the Plant 1 boiler room.

- A UST/LUST identified on the Larsen Marine property is a recognized environmental condition; however, it has not been determined whether this UST is located on land owned by OMC and leased to Larsen.

- As discussed in the asbestos survey report, numerous sources of asbestos-containing material were identified throughout the facility, which represent a recognized environmental condition.

- Numerous PCB-containing transformers, both on the roof and in the plant, were identified in Plant 2. Although no releases have been noted, the presence of the PCB-containing transformers represents a recognized environmental condition.

- Although no sampling or surveys were performed, it appears that lead-based paint may be present in numerous locations throughout the facility, based on the buildings' ages and typical historic painting activities. The potential presence of lead-based paint represents a recognized environmental condition.

REPORT
PHASE I ENVIRONMENTAL SITE ASSESSMENT
AND ASBESTOS SURVEY
OUTBOARD MARINE CORPORATION LAKEFRONT PROPERTY
WAUKEGAN, ILLINOIS
FOR
OUTBOARD MARINE CORPORATION

1.0 INTRODUCTION

URS Corporation (URS) was retained by Outboard Marine Corporation (OMC) to perform a Phase I Environmental Site Assessment (ESA) of its entire lakefront property located in Waukegan, Lake County, Illinois. This property includes both OMC's corporate headquarters, North American Engine Operations (NAEO) headquarters, Product Development Center (PDC) and manufacturing facilities. The scope of work also included a facility-wide asbestos survey.

This report presents the key findings and associated recognized environmental conditions that have been identified as a result of the assessment. The term *recognized environmental conditions* means the presence or likely presence of *hazardous substances* or *petroleum products* on a *property* under conditions that indicate an existing release, a past release, or a material threat of a release of *hazardous substances* or *petroleum products* into structures on the *property* or into the ground, groundwater, or surface water of the *property*.

The work was conducted in accordance with the American Society for Testing and Materials (ASTM) E1527-97 (*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*) published in May 1997 and URS's February 2, 2000 and March 22, 2000 proposals and included the following:

- A site reconnaissance to visually identify recognized environmental conditions, including taking photographs of the site conditions;
- An interview with Mr. Anthony Montemurro, OMC Environmental Specialist;
- A review of historical documents including previous environmental reports on the historical use of the subject property;
- Contacts with local officials;
- Visual observation from the site of adjacent properties (where possible) to assist in determining their current use and potential impact to the site;
- Identification of evidence of on-site underground storage tanks (USTs) and aboveground storage tanks (ASTs);

- Identification of potential or suspected polychlorinated biphenyls (PCBs), asbestos-containing materials, or other toxic or hazardous materials of significance that are present on site; and

- Review of available federal and state environmental regulatory agency lists [e.g., National Priority List (NPL); Corrective Action Site List (CORRACTS); Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List; Emergency Response Notification System (ERNS) List; Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Facilities and Generators Lists; Solid Waste Landfill (SWLF) List; Leaking Underground Storage Tank (LUST) List; and registered UST List] to identify whether the site, adjacent properties, or properties within an approximate minimum search distance are on these lists. The search distance selected for this project was extended to 1.5 mile for the NPL and RCRA TSD lists. The search distances for the remaining lists were determined by the environmental professional conducting the environmental assessment, based upon the radius profile for the site and ranged from 1.5 miles to 0.625 miles, depending on the types of sites identified on the lists.

The Phase I ESA was directed by Michael Ander of URS's Chicago office. The Phase I ESA was managed by Ms. Gail Artrip, P.E., also of URS's Chicago office; Ms. Artrip performed the field portion of the Phase I ESA on March 31 and April 5, 2000. Curricula vitae for Mr. Ander and Ms. Artrip are provided in Appendix A. Messrs. Michael Rehor, P.E., OMC Corporate Manager of Environmental Services, and Anthony Montemurro, OMC Environmental Specialist, provided information pertaining to the site and operations. Mr. Montemurro also provided a tour of the site. The facility-wide asbestos survey was subcontracted by URS to Environmental Consulting Group of Chicago. The asbestos survey report is included as Appendix B.

2.0 SITE DESCRIPTION

This section includes a description of the site location, site layout and current and historical operations, surrounding land use, site history and historical document review, and environmental database review.

2.1 SITE LOCATION

As shown in Figure 1, the OMC Waukegan Lakefront property is located along the Lake Michigan shoreline in Waukegan, Lake County, Illinois. The site is in an area of mixed land use that includes industrial, recreational, and municipal. The elevation of the site is approximately 580 feet above mean sea level as referenced in the United States Geological Survey (USGS) Waukegan, Illinois 7.5-Minute Series Quadrangle topographic map (1980).

2.2 SITE LAYOUT AND CURRENT AND HISTORICAL OPERATIONS

The OMC Waukegan Lakefront property consists of approximately 124 acres with five separate buildings. These are referred to as Plant 1, Plant 2, Information Technology, Corporate Headquarters, and the Environmental Health and Safety buildings. Portions of OMC owned property are not presently in active use. Figure 2 shows the site layout. Representative photographs of the site taken during the site reconnaissance are included in Appendix C.

The Plant 1 building, which was constructed in several phases between 1927 and 1971, is used for manufacturing operations, the PDC and NAEO corporate office staff. Current manufacturing operations conducted in Plant 1 include aluminum and cast iron machining, electro-less tin plating, electrodeposition painting and wastewater treatment. Prior to 1985, this building was used for final assembly of outboard motors and stern drive motors. These activities, carried out at various locations throughout the building, included spray painting, printing, vapor degreasing with chlorinated solvents, chromate conversion coating and engine testing. Prior to the 1950s, die casting and electroplating also were conducted in Plant 1. The PDC activities include engine testing, spray painting, wastewater treatment and boathouse operations. Some of the floor space currently used by PDC previously was utilized for outboard motor assembly. The land area occupied by this building is approximately 339,000 square feet. The building does not have a basement. Numerous floor drains were observed in this building in production areas. These drains historically discharged to Waukegan Harbor until the late 1940s. They have since been abandoned.

The Plant 2 building, which was constructed in several phases between 1949 and 1975, is used for manufacturing operations. The most westerly portion of the Plant 2 land was purchased from Elgin, Joliet and Eastern Railway Company (EJ&E) in 1948. The easternmost 47 acres of the Plant 2 land was purchased from Abbott Laboratories in 1956. The acreage between these two areas was purchased some time between 1948 and 1956.

Current manufacturing operations conducted in Plant 2 include aluminum melting and holding, aluminum die casting, aluminum machining, polishing and finishing, spray painting, assembly, parts washing, chromate conversion coating and wastewater treatment. Activities that were previously conducted in Plant 2 include vapor degreasing, printing, solvent distillation, coolant reclamation, aluminum scrap processing and electroplating. The land area occupied by this building is approximately 1,036,000 square feet. There is also a basement present beneath the wastewater treatment area.

Plant 2 also includes numerous floor and strip drains, particularly in the die cast area. Drain systems are present around each of the die casting machines. These are used to collect and convey spent die lubricants and tramp oil to the subslab piping network. Two sets of tunnels are present beneath Plant 2; one active set at the eastern end where die casting is presently conducted, and one inactive set at the western end. The eastern end tunnels run north-south and allow access to the subslab piping systems used to convey spent die lubricants, tramp oils, non-

contact cooling waters, compressed air, and natural gas. URS observed the active tunnels beneath the eastern end of the building to be relatively dry. Several floor drains were observed in these tunnels. These previously drained to the North Shore Sanitary District (NSSD). However, according to OMC personnel, these drains have been plugged. Minor amounts of oil are present on the tunnel floors. The integrity of the eastern tunnel concrete appeared sound. The outside of the tunnel walls were reportedly lined with a rubber membrane prior to forming the concrete when this section of the plant was built.

During the site visit, no access was possible to the western set of tunnels, as these contain water, have low ceilings, and have inadequate ventilation for purposes of safe confined space entry or human occupation. This western set is no longer in use since all die casting operations have been moved to the eastern end of Plant 2. Like the tunnels in the eastern end, numerous pipelines (steam, oil, die lubricants, etc.) were historically present in the western end tunnels. The tunnels allowed access as needed to conduct maintenance on the piping. Historically,[1] the die casting machines held a PCB fluid in the self-contained hydraulic sump associated with each machine. Minor amounts of PCBs were released during operation of the machines. Some of these fluids entered the piping networks in the concrete tunnels and are believed to have contributed to the Waukegan Harbor Superfund site PCB-contaminated sediment problem. The western tunnel system ceased use in 1975 when the die cast machines were relocated to the eastern end of Plant 2. The tunnels and piping were never formally decommissioned or decontaminated. However, storm sewers in the tunnels that exit the Plant 2 building on the north and south sides were addressed in 1977 by removing a section of the piping, excavating the soils in the immediate vicinity, backfilling, and plugging the piping where it extends into the building. In addition, the associated manholes were also filled with concrete.

The OMC-owned property includes the Coke Plant site. The Information Technology building was constructed by OMC in 1975 after purchasing the Coke Plant site on which it sits[2]. This parcel was formerly the site of a manufactured gas and coking operation and is now being treated as a Superfund site (see Section 5.2). The land area occupied by this building is 20,000 square feet.

The Corporate Headquarters building was constructed in 1958, and houses the corporate office for OMC. This building is adjacent to Plant 2. The land area occupied by this building is approximately 18,000 square feet.

The Environmental Health and Safety (EH&S) building was constructed in 1927. The building was formerly used in conjunction with administrative aspects of the Coke Plant operations that

[1] The Waukegan Harbor Record of Decision indicates that OMC used PCB fluids from 1961 through 1972. However, purchasing records suggest that PCB fluids may have been purchased as early as the late 1950s.

[2] OMC purchased the Coke Plant site in two stages, in 1969 and 1972.

were conducted on the site. The land area occupied by this building is approximately 2,900 square feet.

The OMC-owned property encompasses a portion of and is adjacent to the Waukegan Harbor Superfund site. This is discussed in Section 5.1 of this report.

OMC leases a portion of its property (81,500 square feet on the Coke Plant site) to Larsen Marine for use as boat storage. There is no expiration date for this lease, but OMC retains the right to terminate the lease with 30 days of notice.

2.3 SURROUNDING LAND USE

The land use surrounding the subject facility is a mixture of industrial, recreational, and municipal. Figure 2 presents this information graphically.

North: To the north is the NSSD facility, a publicly owned treatment works serving the region, and beyond that, a Midwest Generation coal-fired power plant. This plant was previously owned by Commonwealth Edison.

East: A public beach and dunes property owned by the City of Waukegan is located directly to the east, beyond which is Lake Michigan, except east of Plant 2 where OMC owns the land up to Lake Michigan.

South: To the south is the City of Waukegan Water Filtration Plant, supplying potable water to the community. The plant takes its water from Lake Michigan, with intake structures located several hundred feet out into the lake—a backup intake is located in Waukegan Harbor.

West: To the west of the Plant 1 and Coke Plant Superfund site is Waukegan Harbor, beyond which is National Gypsum. To the west of Plant 2 are railroad tracks operated by EJ&E and A.L. Hanson Manufacturing Company.

2.4 SITE HISTORY AND HISTORICAL DOCUMENT REVIEW

URS reviewed historical documents including aerial photographs and Sanborn fire insurance maps associated with the OMC Waukegan Lakefront property. Past land uses were investigated to identify historic practices or conditions that may have impacted the property. The following sections provide a summary of the historical document review, together with a general history of the site based on available documentation. The historical review was generally focused from 1927 until present, since facility representatives indicated that the property was vacant prior to OMC's initial development of manufacturing facilities in 1927.

2.4.1 Sanborn Fire Insurance Maps

URS obtained Sanborn Fire Insurance maps (Sanborn maps) for the OMC Waukegan Lakefront property through VISTA Information Solutions, Inc. (VISTA). Maps for 1929, 1949, and 1969 were provided, and are included as Appendix D.

1929 — The Sanborn map shows the eastern portion (easternmost 400 feet approximately) of Plant 1, and identifies heat treating, electroplating, and grinding operations along the interior southern wall of the building. A gasoline tank and filling station are also shown in the parking lot area to the north of Plant 1. The Coke Plant portion of the site is identified as "North Shore Coke & Chemical Company," and shows several conveyors and a rail spur encircling most of the site. The Coke Plant site also identifies various functions including a machine shop, ammonia storage, a laboratory, a thionizer building, fuel oil tank, additional gas and oil underground storage tanks, fuel gas holder, and tar storage.

1949 — The Sanborn map shows Plant 1, only much larger than in the 1929 map (excludes only the westerly Engineering portion). The map shows die casting operations located in the westernmost end of the building. No other operations within Plant 1 are specified on the map. There are three or four underground storage tanks shown in the parking lot area north of Plant 1. Three are labeled as "fuel oil." Wording associated with the possible fourth tank is not legible. However, it appears to coincide with a former gasoline UST designated 1.4. An underground structure is also evident near the northwest corner of the parking lot. OMC representatives indicated that this feature represents the harbor intake water sump. The Coke Plant portion of the map is nearly identical to the 1929 version, except that some additional tar tanks and a gas producer building have been added.

1969 — The Sanborn map shows Plant 1 in nearly the same configuration as the 1949 map, except that a printing shop and small motor testing and storage building have been added along the western limit. The same three to four underground storage tanks are still evident in the parking lot north of the building. The portion of Plant 2 (existing in 1969) that includes the die casting at the western end and aluminum smelter (then at the southwest corner of Plant 2) are also shown on this map, but the rest of the current Plant 2 site is not presented. The Coke Plant portion of the map is nearly identical to the prior version, except that a few small buildings have been removed.

2.4.2 Aerial Photographs

Aerial photographs dated 1937, 1953(ca), 1955(ca), 1970, 1977, 1986, 1990, and 1995 were obtained from Chicago Aerial Photograph Service and Lake County Department of Planning and Development for the subject property. A brief summary of the aerial photographs review follows.

1937— (Scale estimated at 1 inch equals 200 feet.) The photo is of good quality, but only shows the portion of the property south of Sea Horse Drive.

Plant 1—Photo shows only the eastern one-third to one-half of the present day building except for the presence of a building structure adjacent to the harbor. The area between the plant and the building is underdeveloped and sparsely vegetated. The city water filtration plant property is vacant/underdeveloped.

Coke Plant— The Coke Plant site, including the structure that currently houses OMC's EH&S functions, is evident and in use. Various conveyors and other equipment are present, as well as some large piles along the western one-third of the Coke Plant property. Also present on the Coke Plant site are some aboveground storage tanks in the southern one-third, and a pond, measuring an estimated 100 feet by 25 feet, to the west of the EH&S Building. Two other ponds (parallel with and near the eastern section of Sea Horse Drive) are evident; one measures approximately 140 feet by 20 feet, while the other measures approximately 400 feet in length, with a variable width of 15 to 140 feet. There is a rail spur extending into the Coke Plant area from the north-central edge of the site.

1953(ca) — (Scale not known. Projection is at angle, shot toward the east.) Quality of photo is average.

Plant 1— Not shown in this photo.

Coke Plant — Only northernmost portion of Coke Plant site is shown in photo, and includes rail spur and part of the pond.

Plant 2— Photo shows the former aluminum smelter (now, the Hazardous Waste Storage Building) and the old die cast area at the westernmost part of the building. Just east of the building is a cooling pond (refer to Figure 3 for approximate location of this former feature). The eastern two-thirds of the Plant 2 site is underdeveloped and vegetated.

Surrounding Land Use—The NSSD site is underdeveloped and vegetated.

1955(ca) —(Scale not known. Projection is at an angle, shot toward the northwest). Quality of the photo is good.

Plant 1— Appears much as it does today. Nearly the entire structure is present.

Coke Plant — The Coke Plant site is in active use, similar to earlier photos. This angled photo only shows the southwestern half of the site, and does not include the ponds.

Plant 2— Photo shows the former smelter and old die cast area. The settling pond just east is also evident in the photo. The eastern portion of the site is not developed.

Surrounding Land Use—The water filtration plant is evident. National Gypsum has not yet been constructed.

1970 — (Scale of 1 inch equals 400 feet.) Quality of the photo is good.

Plant 1 — Plant 1 appears on the photo, for the most part, as it appears today.

Coke Plant — The Coke Plant appears as it did in the prior photo.

Waukegan Harbor-Related Areas — Former Slip 3 is evident and still in use. The photo, taken in March, indicates the presence of ice in the harbor. The Crescent Ditch and Oval Lagoon (located north of the northwest corner of Plant 2 on the OMC property) are present in the photo as well.

Plant 2 — A significant addition has been constructed on the easterly part of Plant 2. The cooling pond evident in the prior photographs is no longer present; the addition extends over this area. The area east of the addition is visibly disturbed. There is a drainage course evident emanating near the southeast corner of Plant 2 (currently Outfall 007) to Lake Michigan. The North Ditch feature is evident in the photo, but its discharge to Lake Michigan is not apparent.

Surrounding Land Use — The site directly north of OMC (currently the NSSD property) has not been developed, but has ponds on site and appears disturbed. The Waukegan Water Filtration Plant (south) and National Gypsum (west side of harbor) appear much as they do today. Larsen Marine is evident in the photo, but occupies only about one-half of the property (the western half) that it occupies today. The rail lines along the western property edge are in active use in the photo.

1977 — (Scale of 1 inch equals 400 feet). Quality of the photo is somewhat compromised.

Plant 1 — Plant 1 appears on the photo, for the most part, as it appears today.

Coke Plant — The Information Technology Building has been constructed and is evident on the photo. The conveyors and other equipment are no longer present, and numerous small mounds are present in the locations previously occupied by large piles along the western one-third. The ponds are no longer evident in the photo. There appears to be significant equipment present along the north central portion of the Coke Plant site. The remainder of the site is disturbed in appearance.

Waukegan Harbor-Related Areas — Former Slip 3 is evident and still in use. The Crescent Ditch and Oval Lagoon are present in the photo as well.

Plant 2 — Plant 2 appears much as it does today, with the addition of the eastern half of the building. Both of the east side drainage courses to Lake Michigan are evident in the photo.

Surrounding Land Use — The NSSD site has been developed. The Waukegan Water Filtration Plant (south) and National Gypsum (west side of harbor) appear much as they do today. Larsen Marine is evident in the photo, and its land use is expanding eastward.

1986 — (Scale of 1 inch equals 200 feet.) The photo is of average to good quality.

Plant 1 — Plant 1 appears as it does today.

Coke Plant — Numerous cars are evident on the north and west sides of the Information Technology Building. What appear to be truck trailers are evident in many locations on the Coke Plant site. The site has been regraded, with most of the disturbed areas leveled. The equipment near the north-central portion of the site (evident in prior photo) is gone. No ponds are present.

Waukegan Harbor-Related Areas — Former Slip 3 is evident and still in use. The Crescent Ditch and Oval Lagoon are evident in the photo.

Plant 2 — Plant 2 appears much as it does today, with the addition of the eastern half of the building. Both of the east side drainage courses to Lake Michigan are evident in the photo. Numerous aboveground storage tanks are evident within the concrete diking on the north side of the plant in the parking lot (remnants of this diking remain today).

Surrounding Land Use — The NSSD site is similar to the prior photo. The Waukegan Water Filtration Plant (south) and National Gypsum (west side of harbor) appear much as they do today. Larsen Marine is also evident in the photo.

1990 — (Scale of 1 inch equals 400 feet). Quality of the photo is average to poor.

Plant 1 — Plant 1 appears as it does today.

Coke Plant — The site appears inactive but disturbed. No ponds are present.

Waukegan Harbor-Related Areas — Former Slip 3 is evident and still in use. The Crescent Ditch and Oval Lagoon are evident in the photo.

Plant 2 — Plant 2 appears much as it does today. Both of the east side drainage courses to Lake Michigan are evident in the photo. Numerous aboveground storage tanks are still evident within the concrete diking on the north side of the plant in the parking lot.

Surrounding Land Use — The NSSD site is similar to the prior photo. The Waukegan Water Filtration Plant (south) and National Gypsum (west side of harbor) appear much as they do today. Larsen Marine is also evident in the photo, but has extended its operation further to the east again.

1995 — (Scale of 1 inch equals 400 feet.) The quality of the photo is average to good.

Plant 1 — Plant 1 appears as it does today.

Coke Plant — The site appears inactive but scarred/disturbed. No ponds are present.

Waukegan Harbor-Related Areas — Former Slip 3 is no longer in use, and instead appears as it does today, with filling/capping and an access roadway. New Slip 4 has been constructed; Larsen Marine's operation extends around all sides of the new slip. The East and West Cells have been constructed on the OMC site, north of Plant 2. The Crescent Ditch and Oval Lagoon are no longer evident.

Plant 2 — Plant 2 appears much as it does today. Both of the east side drainage courses to Lake Michigan are evident in the photo. The former Die Storage building that had been located north of the northwest corner of Plant 2 has been demolished since the prior photo. The aboveground storage tanks are no longer evident within the concrete diking on the north side of the plant in the parking lot.

Surrounding Land Use — The NSSD site is similar to the prior photo. The Waukegan Water Filtration Plant (south) and National Gypsum (west side of harbor) appear much as they do today. Larsen Marine is also evident in the photo, and its operation now surrounds new Slip 3.

2.5 ENVIRONMENTAL DATABASE REVIEW

URS reviewed information gathered from several environmental databases through VISTA to evaluate whether activities on or near the subject property have the potential to create a recognized environmental condition on the subject property. VISTA reviews databases compiled by Federal, state, and local governmental agencies. The complete list of databases reviewed by VISTA is provided in the VISTA report included as Appendix E. It should be noted that this information is reported as URS received it from VISTA, which in turn reports information as it is provided in various government databases. It is not possible for either URS or VISTA to verify the accuracy or completeness of information contained in these databases. However, the use of and reliance on this information is a generally accepted practice in the conduct of environmental due diligence. A description of the databases searched and the information obtained is summarized below. Extended radii were requested given the relatively large nature of the OMC

Waukegan Lakefront property. The reference address given to VISTA for purpose of centering the search was 100 Sea Horse Drive in Waukegan, Illinois.

Type of Database	Description of Database/Effective Date	Radius Searched	Number of Sites Identified
NPL	The National Priorities List (NPL) identifies uncontrolled or abandoned hazardous waste sites. To appear on the NPL, sites must have met or surpassed a predetermined hazard ranking system score, been chosen as a state's top priority site, pose a significant health or environmental threat, or be a site where the EPA has determined that remedial action is more cost-effective than removal action.	1. 5 mile	2
CORRACTS	RCRA Corrective Action (CORRACTS) sites are under a "Corrective Action Order" pursuant to RCRA Section 3008(h), indicating that there has been a release of hazardous waste on the site.	1.5 mile	2
SPL	State equivalent priority list (SPL)	1.5 mile	4
SCL	State equivalent CERCLIS list (SCL)	1.0 mile	1
CERCLIS/ NFRAP	The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database identifies hazardous waste sites that require investigation and possible remedial action to mitigate potential negative impacts on human health or the environment. No further remedial action planned (NFRAP) sites are those which were initially investigated by EPA, and it was determined that the site did not warrant inclusion on the NPL.	1.0 mile	8
RCRA TSDs	RCRA-regulated hazardous waste facilities, which treat, store, or dispose (TSD) on site.	1.0 mile	0
SWLF	State inventory of active and inactive solid waste disposal and landfill (SWLF) sites and incinerators	1.0 mile	8
LUST	List of information pertaining to all reported leaking underground storage tank (LUST) sites	1.0 mile	21
UST	State underground storage tank (UST) sites listing	0.75 mile	43
RCRA LQGs	RCRA-regulated hazardous waste large quantity generator (>1000 kg/mo) notifiers list	0.625 mile	7
RCRA SQGs	RCRA-regulated hazardous waste small quantity generator (<1000 kg/mo) notifiers list	0.625 mile	5
ERNS	EPA's Emergency Response Notification System (ERNS) list contains reported spill records of oil and hazardous substances	0.625 mile	3

The databases listed above were searched at the radii indicated above. The subject facility appeared on the NPL, CORRACTS (TSD), SPL, CERCLIS/NFRAP, LUST, UST, LQG, AND ERNS (2) databases. The identified facilities are subdivided into three categories: OMC

listings, which refer to the subject site; nearby facilities of significance, based on proximity to the subject site; and facilities of lesser significance, meaning those not expected to have an adverse environmental impact on the subject site.

2.5.1 OMC Listings

- NPL — OMC is identified on the NPL (see p. 26, VISTA Report); however, the information fields in the database were not completed.

- CORRACTS (TSD) — OMC is identified as having a "high" prioritization status, with completion of a RCRA Facility Assessment. No dates are provided in the database. The database identifies that the need for a RCRA Facility Investigation exists, but then indicates that "No Further Corrective Action at this Time" is warranted. Apparently, a Stabilization Measures Evaluation was also conducted. The database also identifies "storage/treatment" activities at the site.

- SPL — OMC is identified on the SPL, identifying it as a "State Status: NPL Site," but none of the other fields are completed in the database report.

- CERCLIS — OMC is identified on the CERCLIS database, reporting that "The Johnson Outboards Division of OMC was found to be discharging PCBs to the Waukegan Harbor and to the North Ditch which are tributaries of Lake Michigan. Up to one million pounds of PCB may have been discharged." This report was made by EPA Region 5. The site is listed on the final NPL. Units include site-wide, harbor slip construction, coke plant, and containment cells. It identifies Waukegan Manufacturing Gas Coke Plant as an alias. Several entries in the database suggest that activities related to the Waukegan Harbor Superfund site, as well as the Coke Plant Superfund site, are both listed in this one section of the database, somewhat blurring which activities correspond to which of the two Superfund sites. Consequently, URS has identified the activities in chronological order, not necessarily distinguishing which of the two Superfund sites these activities apply to, since it is not always apparent in the VISTA database report.

  The site was reportedly discovered in August of 1980. A Hazard Ranking System Scoring was completed in August of 1982. A Preliminary Assessment/Screening Site Investigation was conducted in January 1983. The priority assigned to the site is not clear (one field identifies as "lower priority;" a second field identifies as "higher priority"). The site was included on the Final NPL listing in September of 1983. A combined Remedial Investigation/Feasibility Study (RI/FS) (EPA-financed) was completed and a Record of Decision was issued in May of 1984. The Remedial Design was completed in June of 1985. Design Assistance was completed in March of 1990. Three separate Remedial Investigations at NPL Sites events are identified, in August of 1990, August of 1991, and June of 1993 (Coke Plant Site). A Community Relations Plan was completed in May of 1993. A second listing Record of Decision is identified as having occurred in September of 1999.

Additional information regarding the actual chronological events related to the Waukegan Harbor Superfund site and Coke Plant Superfund site are presented in Sections 5.1 and 5.2 of this report, respectively.

- LUST — Five LUST listings for OMC are included in the database. The corresponding Illinois Emergency Management Agency (IEMA) numbers assigned to these listings include 903171, 913462, 921734, 931471, and 971736. No additional detail in regard to the specific tanks or current status is offered in the database report. However, additional information pertaining to the on-site LUSTs was provided by OMC, and is described in Section 5.4 of this report.

- UST — OMC is identified on the UST database, with a table summary presented below:

Contents	Tank Size (gallons)	Status
Heating oil	12,000	Removed
Gasoline	1,000	Removed
Gasoline	1,000	Removed
Heating oil	12,000	Removed
Heating oil	12,000	Removed
Gasoline	15,000	Removed
Other (not specified)	2,500	Removed
Gasoline	2,500	Removed
Gasoline	1,500	Removed
Gasoline	1,500	Removed
Gasoline	1,000	Removed
Other	15,000	Removed
Heating oil	20,000	Abandoned
Heating oil	20,000	Abandoned
Hydraulic oil	15,000	Removed
Hydraulic oil	15,000	Removed
Hazardous	4,000	Exempt
Oil (not specified)	5,500	Active/in service
Oil (not specified)	5,500	Active/in service
Oil (not specified)	6,000	Active/in service
Oil (not specified)	6,000	Active/in service
Oil (not specified)	6,000	temp out of service
Oil (not specified)	4,400	temp out of service
Hazardous	15,000	Removed
Heating oil	20,000	Abandoned

Additional information regarding the status of these former USTs is included in the UST Summary table at the end of this report, as provided by representatives of OMC.

- LQG — OMC is identified in this database as a large quantity generator of at least 1000 kg per month of hazardous waste. The facility has been assigned USEPA ID No. ILD 000 802 827. Additional information regarding OMC's RCRA status is provided in Section 4.2.3 of this report.

- ERNS — OMC appeared twice on the ERNS database under two separate addresses. It was identified in conjunction with an October 1993 spill of water soluble die lubricant (quantity not specified) into the storm sewer and containment pond. A December 1993 spill of 50 gallons of nitric acid to the concrete floor was identified. A March 1994 spill of approximately 20 gallons of water soluble die lubricant, possibly released to the sanitary sewer, was also identified. An October 1995 spill of approximately two ounces of two-cycle oil to the Waukegan Harbor was included.

2.5.2 Nearby Facilities of Significance

This section provides information from the VISTA database on nearby properties which, in URS's judgement, have the potential to adversely impact the subject site.

GM Coke Plant — This site was identified on the CERCLIS/NFRAP and SWLF databases. The Coke Plant, identified as being within USEPA Region 5, according to the VISTA report, is shown as "not on the NPL." This site is one and the same as the Coke Plant owned by OMC. The database also indicates that the site was discovered (no date specified), and that a Preliminary Assessment was conducted in December of 1987. A Screening Site Inspection was conducted in August of 1990, at which time a No Further Remediation Action Planned finding was assigned. With regard to the SWLF listing, the database reports that the facility status is inactive, but no additional information is provided. The GM Coke Plant Superfund site constitutes a recognized environmental condition as further discussed in Section 5.2 of this report.

Larsen Marine Service — Larsen is listed as both a LUST and UST site. This site, which is adjacent to OMC and to whom OMC leases a portion of its property, reportedly has five USTs, with the following status:

Contents	Tank Size (gallons)	Age	Status
Gasoline	2,000	33	removed
Diesel	2,000	33	removed
Gasoline	10,000	24	active/in service
Other (not specified)	500	96	exempt
Other (not specified)	500	96	exempt

Larsen reported a LUST under IEMA No. 910325. No additional information on the LUST is provided by VISTA. It is not known whether the USTs/LUSTs are on Larsen-owned or OMC-owned property. In URS's judgement, this LUST(s) may be a recognized environmental condition. However, OMC believes that this site is not located on OMC property.

Greiss Pfleger (a.k.a. Com Ed, Tannery Site, Pfleger, Pfleger Griess, Pfleger-Greiss) — This site appears to be approximately 1/3 mile north of the OMC site. The site is listed numerous times in the VISTA database under the various aliases identified, and appears on the CERCLIS/NFRAP, SWLF, and SCL. The site is reportedly not on the NPL. It was discovered by USEPA in June of 1984. A Preliminary Assessment was conducted in June 1987; a Screening Site Inspection was conducted in June of 1989. The SWLF database identifies this site as a closed landfill. No additional information was available.

Waukegan Tar Pit — The Waukegan Tar Pit site appears on the SPL, CERCLIS/NFRAP, and LQG databases. The tar pit site is located approximately 1/5 mile to the northwest of the OMC facility. The site is identified as "military related," and is reportedly not included on the NPL. The site was discovered in November of 1990. A state-lead Preliminary Assessment was conducted in April of 1992, at which time a "higher priority" status was assigned. Under some form of federal enforcement, stabilization activities were carried out in November of 1993 that included removal of the tar and pit closure. A state-funded "Integrated Assessment/Field Data Collected" effort and a Screening Site Inspection were then conducted in June of 1995, at which time the site was assigned a "lower priority" status. The site is also identified as a LQG, assigned USEPA ID No. ILD 984 807 990.

Abbott Labs, Lakefront (a.k.a. Former Abbott Dspl South Dahringer Rd, Abbott/Lakefront) — This site appears to be approximately 1/6 mile north of the OMC site. The site appears on the CERCLIS/NFRAP and SWLF. The database report indicates that this site is not included on the NPL. No discovery date is identified. However, it appears that initial agency interest was originated by USEPA Region 5. A state-led Preliminary Assessment was conducted at an unspecified time, with subsequent assignment of a "low priority" to the site. A Preliminary Assessment was also conducted by USEPA in July of 1990, concluding a No Further Remedial Action Planned status. The database describes the site as an "Open Dump" now considered inactive and closed.

North Shore Sanitary District (a.k.a. Waukegan Wastewater Treatment) — The NSSD site is immediately north of OMC. It appears on the UST and LUST lists. Five USTs are identified on site as follows:

Contents	Tank Size (gallons)	Age	Status
Used oil	2,000	24	removed
Heating oil	2,000	39	exempt
Heating oil	10,000	62	exempt
Gasoline	10,000	24	removed

Contents	Tank Size (gallons)	Age	Status
Diesel	10,000	24	removed

An IEMA number, 923415, was assigned in conjunction with a LUST event during the removal of one or more of these tanks. No additional information is offered in the VISTA report.

North Shore Gas North Plant (a.k.a. North Shore Gas Plant, NSG-Coal Gasification Plant) — The site appears on the SCL and CERCLIS/NFRAP databases. This site, located to the north of the OMC facility, is reportedly not on the NPL. It was discovered by the State in November of 1990. A state-led Preliminary Assessment was conducted in October of 1991, resulting in the assignment of a "lower priority" status. A Screening Site Inspection was conducted by the state in September of 1992. No additional information was provided in the VISTA report.

2.5.3 Other Facilities of Lesser Significance

A number of other nearby facilities were also included in the database report. Some were at greater distance from OMC, and hence have been judged by URS unlikely to adversely impact the subsurface environment on the OMC property, while others, though physically closer to the OMC property, have been judged unlikely to impact OMC by virtue of the activities or nature of their inclusion on the database. It is not possible for URS to conclusively determine whether these facilities have impacted OMC without significant additional study, including the conduct of Freedom of Information Act searches on these properties. This was beyond the scope of our work on this project. Some of the sites listed below appear to be redundant (based on facility name or address, etc.) but all such listings have been included without determination. A summary of these sites, all located in Waukegan, Illinois, follows:

Site Name	Site Address	Regulatory Category	Range (miles)/Direction From Subject Site
Glueckert Robert	10 Foam Forms Place	UST	0.01 S
In Row of Amstutz Hwy	Anstutz Hwy at Clayton St	UST	0.15 SW
Chicago Northwestern Trans Co	10 W. Clayton St	UST	0.11 SW
Lake Front Hwy Right of Way	Spring St and Clayton St	UST	0.17 SW
City of Waukegan	215 N. Sheridan Rd	LUST, UST, LQG	0.20 SW
City of Waukegan	201 N. Sheridan Rd	LUST	0.21 SW
Bank of Waukegan	111 Clayton St	UST	0.23 S
Duphar Nutrition, Inc.	2 E. Madison St	UST	0.20 S
Waukegan Port Dist	55 S. Harbor Pl	UST	0.26 S
Waukegan Port Dist	95 Madison St	LUST	0.20 SW
News Sun	100 Madison St	SQG	0.21 SW
Dexter Chemical	19 E. Water St	CERCLIS/NFRAP	0.21
US Post Office	326 N. Genessee St	UST	0.24 W
Lake County J A T C	210 N Genessee St	UST	0.27 W
Hanson Al Mfg Co	701 Pershing Rd	UST, SQG	0.30 N
Diamond Scrap Yard	--	SWLF	0.31
Eckard Gary	126-128 N Genessee	UST	0.31 SW
Falcon Marine Co	End of Sea Horse Dr	UST	0.31 E
Waukegan Parking Structure	30 N. Sheridan	UST	0.32 SW
National Gypsum Co, Gold Bond Div	505 Sea Horse Dr	SQG	0.32 NE

Site Name	Site Address	Regulatory Category	Range (miles)/Direction From Subject Site
Gold Bond Building Prod	515 Sea Horse Dr	UST, SQG	0.32 NE
Diamond Scrap Yard	45N# 12E# 21#SE SE	SWLF	0.36
Facility Social Security Admin	1 N. Genessee	UST	0.38 SW
City of Waukegan	220 S. Genessee St	UST	0.41 SW
Salvation Army	431 S. Genessee St	LUST, UST	0.42 SW
Jay Leise Co.	550 S. Genessee St	LUST, UST	0.43 SW
Lake County Public Building	18 North County St	UST	0.42 SW
Blumberg Construction	301 W. Washington St	LUST, UST	0.45 SW
Lake County Babcox Justice Center	20 S. County St	UST	0.45 SW
Firestone Store	100 S. Country Ctrwy	UST	0.46 SW
Bloomberg Construction	215 W. Water St	LUST, UST	0.47 SW
Christ Episcopal Church	410 Grand Ave	UST, LQG	0.38 W
Diamond Burton	20 Water St	UST	0.41 SW
The Valspar Corp	East Water St	LQG	0.42 SW
Dexter Corp	1 E. Water St	LUST, UST, ERNS, LQG	0.42 SW
Diamond Scrap Yards	19 E. Water St	UST	0.42 SW
Diamond Scrap Yard Inc.	19 E. Water St	LUST	0.42 SW
First United Methodist Church	128 North Utica St	LUST, UST	0.42 W
Diamond Scrap Yard	Market St and Elgin	CERCLIS/NFRAP	0.43
North Sch	410 Franklin	UST	0.47 NW
Coroner's Facility	408 Washington St	UST	0.47 SW
Waukegan Co	10 N. Utica St	UST	0.48 SW
Ill Bell Tel Co Waukegan C O	10 N. Utica St	LQG	0.48 SW
Lake County	408 Washington St	LUST	0.50 SW
County Jail	25 S. Utica	UST	0.50 SW
Mobil Oil Corp SS MVV	506 Washington	LUST, UST, SQG	0.56 SW
Air Con Refrig Heating Inc	123 Lake St	UST	0.56 SW
VFW Hall	124 S. Utica	UST	0.57 SW
Estate of Austin Hollis	624 Grand Ave	UST	0.60 W
American National Bank	624 Grand Ave	LUST, UST	0.60 W
Former ATT Facility	932 N. County St	UST	0.61 NW
1st Lien Co	310 Belvidere Rd	LUST	0.68 SW
Vacant Property	310 Belvidere Rd	UST	0.68 SW
Archdiocese of Chicago	405 S. Belvidere	LUST	0.77 SW
Wholesale Oil Co	840 Grand Ave	LUST	0.78 W
General Boiler Property	184 Dahringer Rd	SCL	0.87 NE
Victory Memorial Hospital	1324 N. Sheridan Rd	LUST	0.92 N
Vebb Corp	1120 Washington St	LUST	0.98 W
Waukegan Paint Lacquer	764 South Market St	SPL	1.22
Fansteel-Vascoloy Ramet/Wesson	800 Market St	CORRACTS (TSD)	1.27
Johns-Manville	1871 N. Pershing Rd	NPL, SPL	1.34

3.0 ENVIRONMENTAL SETTING

This section discusses the hydrogeologic setting, surface water resources, and site environmental sensitivity.

3.1 HYDROGEOLOGIC SETTING

The shallow soils at the site consist of fill soils which range in thickness from 2 to 12 feet below ground surface (bgs), beneath which are very fine to fine native sands to a depth of 25 to 30 feet bgs. Beneath the sand is a silty clay till unit that extends to a depth of 110 feet bgs. The till is underlain by dolomite. The shallow fill soils consist of sand with minor quantities of clay and silt; wood fragments and other debris have also been identified within the fill soils.

The depth to groundwater is approximately 2 to 5 feet bgs and exists in an unconfined condition. This depth is heavily influenced by the surface water elevations present in Lake Michigan and Waukegan Harbor. The shallow groundwater unit is confined at its lower boundary at a depth of approximately 30 feet bgs by the silty clay till. The horizontal hydraulic gradient in the shallow groundwater system is relatively flat.
According to the Illinois State Geological Survey Circular 532 entitled *Potential for Contamination of Shallow Aquifers from Land Burial of Municipal Wastes* (Berg Map), the OMC Waukegan Lakefront property appears to be underlain by type "A2" soils indicating the presence of thick, permeable sand and gravel within 20 feet of land surface, consistent with site observations.

3.2 WATER SUPPLY

The site, surrounding properties, and the City of Waukegan obtain potable water from Lake Michigan. The city has no municipal potable wells. However, there are some private residential potable wells within the city limits at a distance from the site (R. Rogers, City of Waukegan Water Dept.) OMC obtains some of its contact cooling water for engine testing directly from intakes located within Waukegan Harbor. No permit is required for these intakes and there are no volume limits associated with these intakes. However, OMC does have a Water Allocation Permit for Lake Michigan waters that are diverted from or not returned to the lake. OMC uses cooling waters for engine testing in a closed loop system equipped with cooling towers. Prior to 1993, the contact water that was used for engine testing (from the Product Development Center) was returned to Waukegan Harbor. Lake water is used for other cooling applications in both buildings. Blowdown from some of these systems is discharged to the NSSD. There are no potable or process wells on site. OMC also uses non-contact cooling water in its manufacturing that is returned to Lake Michigan. Historically, there was a potential well on the Coke Plant Site. The well is no longer in use. It is not known whether it was properly abandoned.

3.3 SITE ENVIRONMENTAL SENSITIVITY

Sensitive habitats in proximity to the site include Lake Michigan and the Waukegan Harbor. No wetlands, streams, or rivers were noted on the OMC property.

4.0 SITE OBSERVATIONS/CURRENT CONDITIONS

This section includes a discussion of URS's observations and discussions with OMC personnel in regard to hazardous materials management practices, waste management, wastewater, storm water, polychlorinated biphenyls, asbestos, and lead-based paint.

4.1 HAZARDOUS MATERIALS MANAGEMENT

4.1.1 Drums and Containers

Drums are stored at various locations throughout Plants 1 and 2. Many of the drums are located in the hazardous waste storage building (see Section 4.2.3) at the southwest corner of Plant 2, and were generally observed to be in good condition. Substances managed in drums include cleaners, grease, oil, solvents, paints, and thinners. No significant drum storage was noted outdoors.

Spent refractory brick was observed outside on the east end of Plant 2 on the ground. A roll-off containing aluminum dross was observed inside near the eastern end of Plant 2. Virgin die lubricants, phosphate coatings, and wastewater treatment chemicals are all managed indoors in totes.

4.1.1.1 Historic Chips Management Practices

OMC used to manage metal chips (machinings, turnings, etc.) coated with machine oils, in three different areas as shown on Figure 3. These included near former UST Nos. 2.40 through 2.42, Nos. 2.43 through 2.46 (both on the north side of Plant 2), and north of the Plant 1 boiler room. Evidence of the two former Plant 2 locations is still present in the form of oily stains of the exterior plant walls and pavement. No aboveground evidence of the Plant 1 area was observed. The chips near Plant 2 were managed in a metal hopper equipped with a trough to which some of the oils drained. The chips near Plant 1 were managed in a three-sided concrete bin equipped with some means of oil collection/containment. The concrete bin structure has since been removed, and the area repaved.

4.1.2 Storage Tanks

4.1.2.1 Aboveground Storage Tanks

Gasoline, kerosene, oil, and waste coolant are managed in aboveground storage tanks near Plant 1 as follows:

Contents	Tank Capacity (gallons)	Location
gasoline	20,000	outdoors
gasoline	20,000	outdoors
gasoline	1,000	outdoors

Contents	Tank Capacity (gallons)	Location
kerosene	500	outdoors
kerosene	500	outdoors
oil	8,000	outdoors
gasoline	5,000	outdoors
gasoline	1,000	outdoors
Waste coolant	11,000	indoors

Each of these materials is directly loaded into or out of the tank by the vendor.

With regard to Plant 2, aboveground storage tanks are used to manage nitrogen, waste concentrate soap, waste coolant, die lube, cutting oil, hydraulic oil, waste die lube, waste soap/water, and gasoline as follows:

Contents	Tank Capacity (gallons)	Location
nitrogen	900	outside
waste concentrate soap	11,000	inside
waste coolant	10,000	inside
die lubricant	1,200	inside
die lubricant	1,200	inside
die lubricant	1,200	inside
cutting oil	5,250	inside
cutting oil	5,250	inside
hydraulic oil	2,200	inside
waste die lubricant	10,000	inside
waste die lubricant	10,000	inside
hydraulic oil	15,000	inside
waste soap/water	2,000	inside
gasoline	500	inside

4.1.2.2 Underground Storage Tanks

At present, there are no active USTs. However, OMC previously had a number of USTs, many of which were removed, while others were abandoned in place. Several of these had leaked, and reported as LUST incidents. Table 1, Former UST Summary, is presented at the end of this report, and provides various details associated with these tanks and LUST sites. The former UST locations are presented on Figure 4. Additional discussion regarding the LUSTs as potential recognized environmental conditions is also included in Section 6.0 of this report.

4.2 WASTE MANAGEMENT

This section discusses OMC's management of solid, special and hazardous wastes. Hazardous wastes are defined in the RCRA regulations.

4.2.1 Solid Waste

General office paper and cardboard are sent off site for recycling. Pallets are either returned to the vendor, thrown in the trash, or chipped and sent for recycling. Lunch room wastes are managed on site in dumpsters destined for landfilling by BFI at its Zion, Illinois facility.

4.2.2 Special Waste

Some of the special wastes generated by OMC include waste oil, die lubricants, soap waste, refractory bricks, aluminum dross, batteries, light bulbs, and oil filters. A table entitled *Summary of Nonhazardous Wastes - 1999* is provided at the end of this report, and details the disposition of each of these waste streams for 1999.

4.2.3 Hazardous Waste

OMC operates under USEPA identification number ILD 000 802 827 under Part B RCRA permit. The facility submitted a new Part B application prior to its expiration but no new permit has been issued to date. OMC has recently withdrawn the application and informed the Illinois Environmental Protection Agency (IEPA) that they will be proceeding with closure. The permit identified two on-site storage areas: the Hazardous Waste Building located at the southwest corner of Plant 2 and a small outdoor area next to the existing fence line in the parking lot north of Plant 1. The outdoor area is no longer used to store hazardous wastes; all are stored indoors at present. The second area had primarily been used to store solid paint residues. The Part B permit did not include any on-site treatment or disposal activities.

Hazardous wastes generated by OMC at present include a gas/oil/water mixture from skimming operations (D001), wastewater treatment sludge from Plant 1 (F019/D006), wastewater treatment sludge from Plant 2 (F019/D007), lyfanite filters (D005/D006/D007), aerosol cans (D001), paint wastes (F005), paint sludge (D001/F003/F005), paint filters (F005), and paint thinner MEK (F005). A table entitled *Summary of RCRA Hazardous Wastes - 1999* is provided at the end of this report, and details the disposition of each of these waste streams for 1999.

4.3 WASTEWATER

OMC is subject to the categorical effluent standards for process wastewaters identified in 40 Code of Federal Regulations (CFR) Part 433 (Metal Finishing Point Source Category) and Part 464 (Metal Molding and Casting Point Source Category). The Part 464 standards do not apply since OMC does not discharge wastewaters in conjunction with its die casting operation. Sampling and analysis is performed for the Part 433 standards twice per year by the NSSD, the

publicly owned treatment works to which OMC discharges. NSSD's Waukegan Treatment Plant is adjacent north of the OMC site. There are four outfalls from the facility to NSSD.

Wastewater pre-treatment is conducted by OMC in each of the two plant buildings, and consists of hexavalent chrome reduction by sodium bisulfite addition, neutralization, metals precipitation, clarification, pH adjustment, and sludge removal. The system in Plant 1 operates at an approximate rate of 5 gallons per minute (gpm). Plant 2's pre-treatment system operates at a rate of approximately 20 gpm. A third pre-treatment system, referred to as the "Davis system," consists of sand and carbon filtering and is used in conjunction with the contact cooling water for engine test cells. This system also discharges at a rate of approximately 20 gpm. OMC discharges under NSSD's "discharge control documents," which define various parameters for its wastewater discharge.

4.4 STORMWATER

OMC discharges its stormwater (including rainwater from the roofs and parking lots) as well as various sources of non-contact cooling water under a National Pollutant Discharge Elimination System (NPDES) permit, a copy of which is included as Appendix F. Prior to the permit's expiration in 1992, OMC submitted a renewal application, but a new permit has not been issued to date. As such, OMC operates under the conditions of its prior permit. Most of OMC's outfalls directly discharge to the Waukegan Harbor, while others discharge to Lake Michigan. In accordance with the permit, a few of these outfalls require sampling and analysis for various parameters, including PCBs, pH, temperature, flow volume, and suspended solids.

4.5 POLYCHLORINATED BIPHENYLS

As previously mentioned, OMC historically used PCBs in its die cast equipment as a hydraulic fluid from 1961 until 1972. The die cast equipment was originally operated in the westernmost end of Plant 1. During the 1950s, the die casting operations were moved to Plant 2. In 1975, the die casting operations were moved again, this time to the east side of Plant 2 where they remain today.

As discussed in Section 2.2, PCB-containing fluids entered the subslab piping network within the western tunnel system beneath Plant 2, and leaks from the piping may have occurred within the tunnels. The western tunnel system ceased use in 1975 when the die cast machines were relocated to the eastern end of Plant 2. The tunnels and piping were never formally decommissioned or decontaminated. However, the location where the tunnels exit the Plant 2 building on the north and south sides were properly abandoned. The western tunnel area is considered a recognized environmental condition due to the potential presence of PCBs in this location.

OMC has numerous PCB transformers still in use at Plant 2. Several of these are mounted on the roof and are equipped with curbing. The others are located inside of Plant 2 and are mounted on pads with curbing. Seven PCB capacitors are also located within the Plant 2 facility. All

transformers are inspected quarterly; releases have not been observed. Figure 5 shows the location of the PCB transformers. OMC also conducts PCB analysis in conjunction with its NPDES storm water permit. Recent data indicates that the majority of the PCB analysis is below detectable levels.

4.6 ASBESTOS

URS subcontracted the performance of a facility-wide asbestos survey to Environmental Consulting Group of Chicago. A copy of the asbestos survey report has been included in Appendix B. The report provides a tabular summary of sample locations and analytical results, as well as figures depicting approximate sampling locations. Asbestos-containing materials (ACMs) were identified in numerous locations throughout the plants and office buildings. Consequently, ACM has been included as a recognized environmental condition.

4.7 LEAD-BASED PAINT

A lead-based paint survey was not included in the scope of work for this project. However, given the age of the buildings, the presence of lead-based paint is likely, and consequently it has been included as a recognized environmental condition.

5.0 SOIL AND GROUNDWATER IMPAIRMENT

Various historic sources of soil and groundwater contamination have been identified on the OMC property. These include the Waukegan Harbor Superfund site, the Coke Plant site, chlorinated solvent groundwater impacts, and UST sites.

5.1 WAUKEGAN HARBOR SUPERFUND SITE

From about 1961 until 1972, OMC used hydraulic fluid in its aluminum die casting operation that contained PCBs. Some of the fluids escaped through OMC's floor drain system. The floor drains discharged in two directions: to North Ditch/Oval Lagoon/Crescent Ditch and to the western part of historic Slip 3 in Waukegan Harbor. Figure 2 shows the location of Waukegan Harbor with respect to the OMC site, as well as the locations of the former North Ditch, Oval Lagoon, and Crescent Ditch on the OMC property. The PCBs were discovered in site soils and harbor sediments in 1976. In 1984, after determining the general extent of PCB impacts in the harbor and on the OMC property, an initial Record of Decision was issued by USEPA.

Waukegan Harbor is an irregularly shaped harbor about 37 acres in size. The Crescent Ditch was approximately 600 feet by 20 feet; the Oval Lagoon measured approximately 240 feet by 40 feet; the North Ditch measured approximately 2,000 feet by 10 to 20 feet. The locations of these former features are presented on Figure 3 for reference.

The two areas within the harbor where unacceptable concentrations of PCBs were found in the sediment were Slip 3 (PCBs > 500 ppm) and the Upper Harbor (50 ppm < PCBs < 500 ppm).

The harbor sediments in these two areas consisted of one to seven feet of very soft organic silt (muck) overlying four feet of medium dense, fine to coarse sand. The sand was generally found to be uncontaminated. Beneath the sand is a very stiff silt that typically ranges from 50 to more than 100 feet thick. Nearly the entire harbor was bordered by 20- to 25-feet long steel sheet piling, which extended into the sand layer above the silt. PCB concentrations in the North Ditch/Oval Lagoon/Crescent Ditch and the general parking lot area north of Plant 2 ranged from 50 to 5,000 ppm.

The Waukegan Harbor Trust, funded by OMC, implemented the amended Waukegan Harbor ROD which was issued in 1989. Based on information provided in the July 8, 1996 Construction Completion Report prepared by Canonie Environmental, the following remedial construction activities were completed between 1989 and 1995:

- The remedial design for the containment of PCB-impacted soil and sediments at Waukegan harbor and the surrounding land.
- Construction of a new boating slip (Slip No. 4) for the relocation of Larsen Marine Services from Slip No. 3.
- Isolation of Slip No. 3, for the containment of Upper Harbor sediments, by installing sheet piling and slurry walls, vertically, and capping with a synthetic liner and soil cover.
- Hydraulic dredging of designated sediments in Slip No. 3 for thermal treatment and hydraulic dredging of designated Upper Harbor sediment for placement in Slip No. 3 for containment.
- Excavation and thermal treatment of 12,750 tons of impacted soil and sediment.
- Construction of two containment cells (the East and West Containment Cells) on the northern area of the site by installing slurry walls and capping with synthetic liners and soil covers.
- Restoration of the North Ditch by excavation of designated sediments, placement in the West Cell, and backfilling the North Ditch with clean sand.
- Construction and operation of six separate water treatment plants to support the various construction operation activities during the remedial action.
- Installation and operation of an extraction well system at each containment cell to maintain an inward hydraulic gradient.

After completion of the construction activities, OMC has performed post-closure operation and maintenance (O&M) and monitoring of the three treatment cells. Quarterly progress reports are submitted to the USEPA summarizing O&M activities and monitoring results.

Recent data from post-closure monitoring shows that PCB groundwater concentrations outside of the treatment cells are all below detection limits except for well MW-10, which is located immediately southwest of the West Containment Cell. During the April 2000 sampling event, this well had a PCB concentration of 1.7 ppb.

Although this matter has been addressed in a manner consistent with the ROD, URS believes that the containment cells constitute a recognized environmental condition due to the documented elevated concentrations of PCBs that remain on site.

5.2 WAUKEGAN COKE PLANT SITE

OMC presently owns the 36-acre property referred to as the Waukegan Coke Plant Superfund site (a.k.a. OMC Operable Unit 2 or the Waukegan Manufactured Gas and Coke Plant Site) which is being treated as a Superfund site. This land is as a large flat open area with sparse vegetation. Presently, the northwestern portion is used for seasonal boat and trailer storage by Larsen Marine and OMC uses a portion of the southeastern corner for the IT building and its associated parking lot. Along the southwestern area of the coke plant site are large soil stockpiles of outer harbor dredgings. Immediately south of new Slip 3 is a covered temporary storage pile of creosote-contaminated soils found during construction of the slip.

The EJ&E purchased the Coke Plant site in 1893 and developed the western portion of the site as a creosote wood-treating plant in 1908. The creosote plant was dismantled around 1917. The site was then converted to use as a larger manufactured gas plant and then as a coke plant under two primary owners, North Shore Gas Company and General Motors, from approximately 1928 to 1969. The remaining coke plant structures were demolished by OMC in 1972. Between 1973 and 1989, OMC used the property for various operations and activities including fire training, public parking, and snowmobile testing.

The Potentially Responsible Parties (PRPs) for this site are OMC, EJ&E, North Shore Gas Company, Larsen Marine and General Motors.

In 1990, USEPA entered into an Administrative Order on Consent with the North Shore Gas Company, requiring the completion of an RI/FS. The RI was conducted from 1992 through 1995 by Barr Engineering on behalf of North Shore Gas, and the RI Report was approved by USEPA in 1996. The FS was finalized in November of 1998. The primary contaminants of concern in site vadose zone soils (uppermost four feet) are various PNAs and arsenic. Site groundwater contaminants include arsenic, ammonia, cyanide, phenol, and benzene, limited to the upper 30 feet, beneath which the presence of a clay till layer impedes further vertical migration. There exists a groundwater divide which runs approximately north-south, promoting water to flow toward Lake Michigan or Waukegan Harbor, depending upon which side of the divide the contamination occurs. Though the occurrence of dense, non-aqueous phase liquid (DNAPL) was not reported during the RI, groundwater contaminant concentrations have been found to increase

with depth (particularly near the sand/clay till boundary). Barr attributed this condition to limited flushing or recirculation of the groundwater in the deeper portions of the near surface aquifer. A final Record of Decision (ROD) was issued by USEPA in September of 1999 and will be implemented in the near future. The Record of Decision (ROD) identifies the following remedy elements (also referred to as Alternative 3):

For shallow soils:

- Excavation of an estimated 7,000 to 15,000 cubic yards of PNA-impacted soils for off site disposal;
- Excavation and off-site disposal of the creosote-contaminated soil stockpile estimated at 4,500 cubic yards;
- In-situ stabilization of an estimated 3,300 to 7,200 cubic yards of arsenic-contaminated soils (with an option to dispose off site if preferred);
- Combination vegetative, asphalt, and building cover for the PNA and arsenic-impacted soils areas, the backfilled excavation areas, and the southwest quadrant of the site;
- Institutional controls; and
- Development of a comprehensive soil management plan intended to accommodate future redevelopment of the site in safe fashion.

For groundwater:

- Short-term, cell-based groundwater extraction, on-site precipitation and biological treatment and on-site reinfiltration of treated groundwater;
- Long-term monitored natural attenuation;
- Groundwater use prohibitions for drinking water purposes; and
- Five-year reviews.

In addition, it is assumed that future use of the site will be limited to either industrial or commercial purposes.

In URS's opinion, the Coke Plant site represents a recognized environmental condition due to the presence of documented soil and groundwater impacts and ongoing Superfund work.

5.3 CHLORINATED SOLVENT GROUNDWATER IMPACTS

An extensive Phase II site investigation has been conducted by OMC in recent years to determine the extent of chlorinated hydrocarbon impacts in conjunction with historic solvent use at the OMC Plant 2 site. This investigation involved the collection of numerous soil and groundwater samples, primarily beneath the central portion of Plant 2, and extending to the northern and western property boundaries, as well as off site onto the Larsen Marine property toward the harbor. Three separate subsurface intervals (shallow, intermediate, and deep), each approximately 10 feet thick, have been studied. The study focused on the uppermost 30 feet, terminating at the clay till boundary since it is assumed that little or no infiltration into this unit would likely occur. The major chlorinated compound encountered has been trichloroethene (TCE), as well as its associated daughter products. Figure 6 shows the approximate extent of the groundwater plume. This figure was generated based on screening data from a hydropunch study. The source of the chlorinated hydrocarbons was believed to have been a large vapor degreaser that historically operated at the location presented on Figure 3 and possibly a settling pond used in the Plant 2 area; there may have been other minor sources that have contributed as well.

The direction of groundwater flow has been somewhat variable, and is subject to the influences of the nearby water bodies, including Lake Michigan to the east, Waukegan Harbor to the south of the source and the North Ditch to the north. Generally, the hydraulic gradient appears to be quite flat. The chlorinated compounds have been shown to extend to the clay till, and a small amount of free product was observed in one sampling location at the till surface. The measured concentrations were compared against the IEPA's Tiered Approach to Corrective Action Objectives (TACO) regulations, assuming a Class I setting. The Class I setting has been assumed due to measured hydraulic conductivity values in the aquifer and due to the presence of significant surface water bodies. TCE, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, and vinyl chloride have been measured at various locations at concentrations exceeding the Class I groundwater remediation objectives. The presence of chlorinated hydrocarbons in the groundwater underlying Plant 2 and surrounds at concentrations exceeding applicable Class I groundwater remediation objectives constitutes a recognized environmental condition.

5.4 FORMER UNDERGROUND STORAGE TANK / LEAKING UNDERGROUND STORAGE TANK SITES

As mentioned, the Former UST Summary table at the end of this report provides information regarding the current status with respect to the various LUST incidents identified at the OMC facility; Figure 4 shows the locations of these areas. URS considers several of these USTs/LUSTs to be recognized environmental conditions because: 1) they were determined to be LUSTs and have not yet completed the closure process with the Illinois Environmental Protection Agency (EPA); 2) they were abandoned in place without any soil testing; 3) they were removed without any testing or documentation as to the potential for a release to have occurred; or 4) they were abandoned in place and had historically stored higher risk chemicals such as

PCBs or chlorinated solvents. Specifically, these include Tank Nos. 1.1 through 1.8, 2.4, 2.7 through 2.11, and 2.40 through 2.46. Tanks that have been removed in recent years and from which no releases were detected are not considered to be recognized environmental conditions.

As indicated on the Former UST Summary Table, closure is presently being pursued for Tank Nos. 1.1 through 1.8 with the Illinois EPA; low priority groundwater monitoring is being conducted in conjunction with these LUSTs.

6.0 CONCLUSIONS

The following recognized environmental conditions were identified as a result of the Phase I ESA:

- The Waukegan Harbor Superfund Site, particularly the East and West Cells and former Slip 3, are considered a recognized environmental condition since these features are located on land owned by OMC, and since high concentrations of PCBs remain in place within the three cells as prescribed in USEPA's Record of Decision (ROD).

- The Coke Plant Site is considered a recognized environmental condition since it is owned by OMC.

- Chlorinated groundwater impacts have been identified that appear to emanate from the central portion of Plant 2, and consequently present a recognized environmental condition. TCE and its daughter products have been detected in site groundwater at concentrations exceeding the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO) Class I groundwater remediation objectives, and free product was observed in one sample.

- Former underground storage tanks (USTs) Nos. 1.1 through 1.8, 2.1 through 2.6, 2.7 through 2.11, and 2.40 through 2.46 present a recognized environmental condition due to documented soil and/or groundwater impacts for which IEPA closure has not yet been sought or obtained, or for which no soil testing was conducted at the time the tanks were removed or abandoned in place.

- The tunnels beneath the western end of Plant 2 are a recognized environmental condition due to the historic use of PCB fluids in the die cast machinery in this area. The presence of PCB sediment contamination has been documented in the former Crescent Ditch, the former Oval Lagoon, and Waukegan Harbor, and are believed to have originated in conjunction with the die casting equipment while it operated in Plant 2's western end. The Crescent Ditch, Oval Lagoon and Waukegan Harbor were all remediated in conjunction with the Waukegan Harbor Superfund site. Although the north and south exits of these tunnels have been cut off beyond the limits of the Plant 2 building and remediated as part of the Waukegan Harbor Superfund cleanup activities, the tunnels themselves (beneath the building) were never cleaned or decommissioned.

- The floor drain network beneath Plant 1 is a recognized environmental condition due to its age and historic operations in Plant 1. The floor drain network was constructed of vitreous clay pipe in 1927 during the initial building of the Plant. At that time, this system discharged directly to the harbor. In the late 1940's, the discharge from this system was rerouted to the North Shore Sanitary District. Historic operations in Plant 1 have included painting, electroplating, degreasing, and other chemical-intensive operations. Most of the floor drains in Plant 1 were plugged in the mid-1990s.

- Most of the site soils impacted with PCBs at concentrations greater than 50 ppm were addressed as part of the Waukegan Harbor Superfund cleanup activities. However, three areas that were not included, and where PCB soil impacts with concentrations greater than 50 ppm may still exist, are considered a recognized environmental condition and include (1) in proximity to former UST Nos. 2.43 through 2.46 (identified in the prior UST recognized environmental condition); (2) near the former aboveground storage tank (AST) area north of Plant 2 in the parking lot; and (3) near former UST Nos. 2.1 through 2.6 (identified in the prior UST recognized environmental condition).

- Three areas on site where historic metal "chips" management activities occurred are a recognized environmental condition, since indications of extensive soil staining were noted. These chips, essentially oil-covered scrap shavings, were managed outdoors in hoppers or concrete bins, and some of the oils appear to have leaked onto the ground. These three areas are near former UST Nos. 2.40 through 2.42, Nos. 2.43 through 2.46, and north of the Plant 1 boiler room.

- A UST/LUST identified on the Larsen Marine property is a recognized environmental condition; however, it has not been determined whether this UST is located on land owned by OMC and leased to Larsen.

- As discussed in the asbestos survey report, numerous sources of asbestos-containing material were identified throughout the facility, which represent a recognized environmental condition.

- Numerous PCB-containing transformers, both on the roof and in the plant, were identified in Plant 2. Although no releases have been noted, the presence of the PCB-containing transformers represents a recognized environmental condition.

- Although no sampling or surveys were performed, it appears that lead-based paint may be present in numerous locations throughout the facility, based on the buildings' ages and typical historic painting activities. The potential presence of lead-based paint represents a recognized environmental condition.

7.0 LIMITATIONS

The conclusions and observations presented in this report are professional opinions based solely upon our visual observations of the site and vicinity, as well as our interpretation of the available historical information and documents reviewed, as described in this report. They are intended exclusively for the purpose outlined herein and at the site location and project indicated. This report is intended for the sole use of OMC. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations represented herein is at the sole risk of said user.

Opinions and recommendations presented herein apply to site conditions existing at the time of our investigation and those reasonably foreseeable. They cannot necessarily apply to site changes of which URS Corporation is not aware and has not had the opportunity to evaluate.

8.0 REFERENCES

1. USEPA Administrative Record for Waukegan Manufactured Gas and Coke Plant Site, Waukegan, Illinois, Vol-1-5, February 19, 1999.
2. Waukegan Harbor Remedial Action, Operations and Maintenance Plan, USEPA Comments, March 25, 1997.
3. Record of Decision, Remedial Action, OMC/Waukegan Coke Plant Superfund Site, September 1999.
4. Low Priority Groundwater Monitoring Plan, LUST Incident Nos. 921734 and 971736, January 2000.
5. Site Classification Completion Report, STS Consultants, June 29, 1999.
6. Environmental Characterization Activities at OMC's Plant 2 Die Cast Facility, STS Consultants, September 20, 1999.
7. SPCC Plan, OMC, August 1999.
8. Record of Decision Amendment Summary, OMC/Waukegan Harbor.
9. West Boiler Room, Plant 2, Final Job Submittal, Holian Asbestos, 1994.
10. North Boiler Room, Plant 1, Final Job Submittal, Holian Asbestos, 1995.
11. Construction Completion Report, Waukegan Harbor Remedial Action, Canonie Environmental, July 1996

Environmental Consulting Group, Inc.

REPORT
ASBESTOS SURVEY
Outboard Marine Corporation
190 Seahorse Drive
Waukegan, Illinois

Performed For:

Ms. Gail Artrip
URS Corporation
1701 Golf Road, Suite 1000
Rolling Meadows, Illinois 60008

901 W. Jackson Blvd.
Suite 203
Chicago, IL 60607
voice 312.733.5900
fax 312.733.5958

Prepared By:

Environmental Consulting Group, Inc.

901 West Jackson
Suite 203
Chicago, Illinois 60607
(312) 733-5900

Project Number: A00179-77
Date: June 26, 2000

REPORT
ASBESTOS SURVEY
Outboard Marine Corporation
190 Seahorse Drive
Waukegan, Illinois

1.0 INTRODUCTION

The purpose of this asbestos survey was to assess the presence, general location and condition of potential asbestos-containing materials (ACMs) within the five separate structures that comprise the Outboard Marine Corporation's (OMC's) Waukegan facility complex, and to generally quantify the materials determined to be ACM. The structures are comprised of both corporate buildings and OMC's Waukegan Engine Plant. The five structures surveyed during this project and a brief description are as follows:

Plant 1: Constructed in several phases between 1927 and 1971
Consists of approximately 340,000 square feet
Has undergone extensive asbestos abatement activities in conjunction with interior renovations during the 1990s

Plant 2: Constructed in various phases between 1949 and 1975
Consists of approximately 1,050,000 square feet
Has undergone asbestos abatement activities, primarily associated with the installation of new heating/cooling systems

Information Technology: Constructed in 1975
Consists of approximately 20,000 square feet
Little, if any, asbestos activities have been conducted in the past

Corporate Office: Constructed in 1958
Consists of approximately 18,500 square feet
Has undergone asbestos abatement activities, particularly within each of the two mechanical rooms

Environmental Health and Safety: Constructed in 1927
Consists of approximately 3,000 square feet
Asbestos abatement activities have not been conducted in the past

This asbestos survey involved conducting a site walkthrough to identify potential ACMs, collecting bulk samples of the potential ACMs, analyzing the bulk samples for asbestos content, assessing the material's condition and estimating the approximate amount of each confirmed ACM. This report describes sampling and analytical methodologies, provides a description and general location of potential ACMs sampled, presents the analytical results, provides an estimate of the amount of each confirmed ACM, and presents conclusions based on the results of this survey.

2.0 METHODOLOGY

ECG conducted the survey between April 4-11, 2000 and on May 3 and 5, 2000. Mr. Bill Berlett, CIH led the project team, which also consisted of Mr. Mike Coy and Mr. Brian Gerike. Each of the project team members are Asbestos Hazard Emergency Response Act (AHERA) certified and Illinois licensed Building Inspectors (IDPH 100-2917, 100-7936, 100-7880, respectively). Mr. David Wesner, an engineering technician with Triad Engineering, subcontracted by OMC, escorted the project team through the duration of the survey. Mr. Kevin Frazier and Mr. Dave Vaughan of OMC assisted the project team through Plant #1 and Plant #2, respectively. These gentlemen provided historic information on asbestos removal projects that have occurred within their respective plant locations.

During the survey of the facility homogeneous areas of potential ACM were identified. Homogeneous areas are building materials uniform in texture and color that appears identical in every other respect. Uniform materials installed at different times are considered to be separate homogeneous areas. The number of samples collected from each identified homogeneous area was at the discretion of the building inspector.

The suspected ACMs were sampled using applicable sample tools to carefully penetrate to the substrate and extract a bulk sample of the material. The sample was placed in a pre-labeled Whirlpak® sample bag, and the sample tool was rinsed with water. Samples were double-bagged using a second airtight bag. After sample extraction, a sealant was used to cover the spot where the sample was collected. At the completion of the sampling activities, the samples were counted and sealed in a shipping container. Sample identification was recorded on chain-of-custody forms and sealed in the shipping container with the samples.

The bulk samples were delivered to Continental Envirotech, Inc. (CEI), an asbestos laboratory in Mesa, Arizona. CEI is a participant in the National Institute of Standards and Technology's National

Voluntary Laboratory Accreditation Program (NVLAP) as an accredited asbestos analytical laboratory (NVLAP # 2000080-0) and is recognized as an accredited laboratory by the American Industrial Hygiene Association (#18106).

The samples were analyzed in accordance with USEPA Regulation 40 CFR Part 763, Subpart F, which specifies using polarized light microscopy (PLM) with dispersion staining for asbestos bulk samples. PLM analysis estimates the percent concentration of asbestos in the material sample and also identifies the type of asbestos present. PLM analysis follows USEPA Test Method 600/R-93/116. USEPA Regulation 40 CFR, Chapter 1, Part 763.103 states that any material which contains more than one percent asbestos is considered asbestos containing.

3.0 DESCRIPTION OF SAMPLE LOCATIONS

ECG collected a total of 264 bulk samples from 101 homogeneous areas of suspect building materials. A description of these samples, including sample identification number, location, analytical results and the general condition for those materials reported containing asbestos, is presented in Table 1. The table has been segregated into five areas representing each of the five buildings included in this survey. Types of material sampled during the survey included floor tile/floor tile mastic, baseboard/baseboard mastic, boiler and tank vessel insulation, pipe insulation, pipe fitting/joint insulation, ventilation duct insulation, wallboard system (drywall, tape, compound), ceiling tile, plaster walls/ceilings, spray-on insulation/fireproofing, and transite siding material.

As a result of multiple layering of certain bulk samples (floor tile, wallboard) the 264 samples collected and submitted to the laboratory produced a total of 415 asbestos analyses. A total of 127 of the 264 samples had either two or three separate layers of material contained within the sample. Each of these separate layers were analyzed and reported separately. Table 1 shows separate analytical data for each of the multiple layered samples.

As a laboratory quality control measure, duplicate samples were collected at a rate of approximately one in every ten samples collected. A total of 24 duplicate samples were collected and submitted to the laboratory using a separate identification number, thus not alerting laboratory personnel of the nature of the sample. The result of the duplicate sample is compared to the result of the sample in which the duplicate sample was obtained from.

This inspection was limited to the interior of the facility and did not include sampling of inaccessible building materials. Additional testing may be required if building materials not identified in this survey are impacted during any planned renovation or demolition activities.

4.0 SUMMARY OF RESULTS

The analytical results indicate that 66 of the 101 separate homogeneous building materials sampled contain asbestos in amounts greater than 1%, and thus are considered asbestos containing. These confirmed ACMs are presented in Table 2, which includes a description of the homogeneous area, general location within the OMC complex and an approximate amount. Figures 1 through 4 present general locations for each of the confirmed homogeneous areas identified on Table 2.

All 24 duplicate samples were reported with concentrations of asbestos within acceptable ranges as compared to their original materials.

A copy of the analytical results from CEI is presented in Appendix A.

5.0 CONCLUSIONS

This asbestos survey has identified 66 homogeneous building materials as asbestos containing. The majority of these materials appeared to be in good condition at the time of the survey. However, some of these were observed in damaged condition, particularly certain thermal system insulation materials found within the various mechanical/boiler rooms and a few floor tile areas.

Mr. Anthony Montemurro, Corporate Environmental Specialist, indicated that he is not aware of an existing Operations and Maintenance Program for either the Corporate Buildings (IT Building, Environmental Building, and the Corporate Building) or the Waukegan Engine Plants #1 and #2. Additionally, Mr. Montemurro indicated that employee/contractor notification regarding the locations of asbestos materials has not been conducted. Asbestos signage was not observed in any location within the OMC Waukegan complex. In accordance with 29 CFR 1926.1101(k), building/facility owners are required to inform employees when they will be working in areas where asbestos is known to exist. Additionally, building/facility owners are required to post signs at the entrances of mechanical/boiler rooms/areas if these areas contain asbestos materials.

A friable material is a material that can be crumbled, crushed, or reduced to a powder by hand pressure. A friable ACM has the potential threat for releasing asbestos fibers into the ambient

environment. A non-friable material is less likely to present a fiber release than a friable material due to its inherent qualities. Material friability is one factor used to assess strategies for proper management of ACMs within an environment such as the OMC facility complex. The ACMs identified during this survey fall into both friability categories. Additional factors to consider include, but may not be limited to, the materials accessibility to potential damage, effects of vibrations and air flow, the material's current condition and its potential to deteriorate, and a cost-benefit analysis of abating the material(s) now or waiting for an incident or event such as building renovation/demolition, mechanical failure, property transfer, etc.

FORMER UST SUMMARY

I.D. No.	Capacity /Tank Contents	Soil or Groundwater Sampling?	Date of Removal (R) or Abandonment (A)	Known LUST?	Agency Involvement / Closure	LUST #
Plant 1						
1.1	# 2 Fuel Oil	Yes	(R) June 92	See Note 1	See Note 1	921734
1.2	# 2 Fuel Oil	Yes	(R) June 92	See Note 1	See Note 1	921734
1.3	# 2 Fuel Oil	Yes	(R) June 92	See Note 1	See Note 1	921734
1.4	Gasoline	Yes	(R) Sept 97	See Note 2	See Note 2	971736
1.5	2-Cycle Oil	Yes	(R) Sept 97	See Note 2	See Note 2	971736
1.6	Gasoline/ Oil Mix	Yes	(R) Sept 97	See Note 2	See Note 2	971736
1.7	Gasoline/ Oil Mix	Yes	(R) Sept 97	See Note 2	See Note 2	971736
1.8	Gasoline/ Oil Mix	Yes	(R) Sept 97	See Note 2	See Note 2	971736
1.9	Gasoline	No	(R) Sept 97	No	No	n/a
1.10	Gasoline	No	(R) Sept 97	No	No	n/a
1.11	Gasoline	No	(R) Sept 97	No	No	n/a
Plant 2						
2.1	Waste Oil / Die Lube	Yes	(R) 1993	No	See Note 3	931471
2.2	Waste Oil / Die Lube	Yes	(R) 1993	No	See Note 3	931471
2.3	Hydraulic Fluid	Yes	(R) 1993	No	See Note 3	931471
2.4	Mineral Spirits	Yes	(R) 1993	Yes	See Note 3	931471
2.5	Hydraulic Fluid	Yes	(R) 1993	No	See Note 3	931471
2.6	Waste Oil / Die Lube	Yes	(R) 1993	No	See Note 3	913462
2.7	# 2 Fuel Oil	No	(R) 1988/1989	No	See Note 4	n/a
2.8	# 2 Fuel Oil	No	(R) 1988/1989	No	See Note 4	n/a
2.9	# 2 Fuel Oil	No	(A) April 92	No	No	n/a
2.10	# 2 Fuel Oil	No	(A) April 92	No	No	n/a
2.11	# 2 Fuel Oil	No	(A) April 92	No	No	n/a
2.40	Trichloroethylene	No	(A) January 2000	No	No	n/a
2.41	Cutting Oil	Soil	(A) January 2000	No	See Note 5	n/a
2.42	Cutting Oil	Soil	(A) January 2000	No	See Note 5	n/a
2.43	See Note 6	Soil	(A) January 2000	No	See Note 5	n/a
2.44	See Note 6	Soil	(A) January 2000	No	See Note 5	n/a
2.45	See Note 6	Soil	(A) January 2000	No	See Note 5	n/a
2.46	See Note 6	Soil	(A) January 2000	No	See Note 5	n/a

Note 1: Closure currently being pursued through site classification process. Closure of this LUST site (921734) is being combined with closure of LUST site #971736 due to proximity of former UST locations. IEPA has approved low priority ground water monitoring plan; first quarter sampling completed in March 2000.

Note 2: Closure currently being pursued through site classification process. Closure of this LUST site (971736) is being combined with closure of LUST site #921734 due to proximity of former UST locations. IEPA has approved low priority ground water monitoring plan; first quarter sampling completed in March 2000.

Note 3: Tank 2.6 failed tightness test in 1991, and incident report filed with I-EPA (#913462). Tanks 2.1-2.6 removed in 1993; second incident number assigned based on visual impacts observed during removal (#931471). Because of some non-petroleum impacts (i.e., PCBs), OMC plans to enter both of these LUST sites into the IEPA's Site Remediation Program.

Note 4: These tanks were removed during the Waukegan Harbor Remediation to allow for the west cell to be constructed. No evidence of a release was noted during removal.

Note 5: Soil sampling was previously conducted through the bottom of the USTs. Impacts were noted, but were not believed related to the materials stored within the USTs.

Note 6: These tanks stored waste PCBs, virgin PCBs, and new oil, as well as other substances during their active lives.

Table 2
Confirmed ACM

Homogeneous Area Description	Building	Location	Approximate Amount
MFB-12x12 Floor Tile and mastic	Environmental Building	Basement	3,000 sf
MFF-9x9 Floor Tile	Environmental Building	Closet-Main Floor	100 sf
SWM-Joint Compound	I.T. Building	Training Room Closet	Throughout
MFO-12x12 Floor Tile & Mastic	I.T. Building	Janitor's Closet	80 sf
MFP-12x12 Floor Tile & Mastic	I.T. Building	Cafeteria	875 sf
TPR-Piping Insulation	Corporate Building	1st Floor Mechanical Room	1,500 lf
TJS-Pipe Joint	Corporate Building	1st Floor Mechanical Room	100 fittings
TTT-Tank Insulation	Corporate Building	1st Floor Chiller Bottom Tank & domestic hot water holding tank	200 sf
UFV-9x9 Floor Tile & Mastic	Corporate Building	Janitor's Room	375 sf
TPX-Pipe Insulation-Steam	Corporate Building	Supply to Radiators at Exterior Wall	600 lf
TJY-Pipe Joint	Corporate Building	2nd Floor Mechanical Room	150 fittings
TBAA-HVAC Unit	Corporate Building	2nd Floor Mechanical Room	12,000 sf
TTAD-Tank Insulation	Corporate Building	2nd Floor Mechanical Room	75 sf
TPAF-Pipe Insul-Steam Supply	Plant #1	2nd Floor – Barb's Office	600 lf
TJAG-Pipe Joint-Steam Supply	Plant #1	2nd Floor – Front office area	150 fittings
MFAI-9x9 Floor Tile & Mastic	Plant #1	2nd Floor AHU Room	90 sf
MFAJ-9x9 Floor Tile & Mastic	Plant #1	2nd Floor AHU Room	600 sf
MFAL-9x9 Floor Tile & Mastic	Plant #1	2nd Floor AHU Room	300 sf
TPAQ-Pipe Insulation	Plant #1	Mezzanine Storage area-plant area	200 lf
TJAR-Pipe Joint	Plant #1	Mezzanine Storage area-plant area	15 fittings
MFAS-12x12 Floor Tile	Plant #1	Center of Dock Office	1,500 sf
MTAT-Transite Panel	Plant #1	North Dock Overhang/On Roof-SW Corner	8,000 sf
TDAU-Duct Insul-Oven Unit	Plant #1	Center of Plant #1	5,000 sf
TTAW-Tank Insulation-Boiler Room	Plant #1	Softened Water Reserve Tank	150 sf
TTAX-Tank Insulation-Boiler Room	Plant #1	Softened Water Reserve Tank	150 sf
TPAY-Pipe Wrap	Plant #1	Boiler Room Blue Line	200 lf
TPBA-Pipe Insulation (gray&white)	Plant #1	Boiler Room-Boiler Feed	400 lf
MFBB-9x9 Floor Tile & Mastic	Plant #1	2nd Floor-1st Floor Engine Repair Office	12,000 sf
MFBC-12x12 Floor Tile	Plant #1	2nd Floor – PDC Drawing Room	3,500 sf
TPBE-Pipe Insulation	Plant #1	PDC-2nd Floor Mechanical Room	200 lf
TFBF-Pipe Joint-Pipe Wrap	Plant #1	PDC-2nd Floor Mechanical Room	50 fittings
TDBG-HVAC Unit Insul Layer #2	Plant #1	2nd Floor Mechanical Room	5,000 sf
MFBI-12x12 Floor Tile	Plant #1	Office adj to PDC Drawing Room	400 sf
TFBJ-Pipe Joint	Plant #1	1st Floor Engine Repair Shop	150 fittings
MTAT-Transite Panel	Plant #2	South, West, and North walls-Older Bldg Structure – West half of plant	21,000 sf
MPBQ-Plaster Wall/Ceiling	Plant #2	Plant Engineering-Men's Room	1,300 sf
MFBT-12x12 Floor Tile & Mastic	Plant #2	Die Cast Office-North End	1,750 sf
TDCB-12x12 Floor Tile & Mastic	Plant #2	Die Cast QA Office-2nd Floor	8,000 sf
MFCK-Mastic for 9x9 Floor Tile	Plant #2	Area 252 Breakroom	1,200 sf
TJCM-Pipe Joint	Plant #2	North Boiler Room	75 fittings
TTCN-Tank Insulation	Plant #2	North Boiler Room-Deaerater Tank	200 sf
TJCO-Pipe Joint	Plant #2	West Boiler Room	20 fittings
TJCQ-Pipe Joint	Plant #2	Boat Storage-NW Corner	20 fittings
MTCR-Lab Tabletop	Plant #2	Machining Lab (abandoned)	20 tabletops
MFCS-9x9 Floor Tile & Mastic	Plant #2	Machining Lab-Salmon	5,000 sf
MFCT-9x9 Floor Tile	Plant #2	Machining Lab-Off White	2,500 sf
TJCU-Pipe Joint	Plant #2	Above Machining Lab	60 fittings
TPCV-Pipe Cloth Wrap Insulation	Plant #2	Above Machining Lab	100 lf

Homogeneous Area Description	Building	Location	Approximate Amount
TPCW-Pipe Cloth Wrap Insulation	Plant #2	Above Machining Lab	100 lf
TPCY-Pipe Joint	Plant #2	Above Machining Lab	Included in TJCU
TDCZ-Duct Insulation	Plant #2	Above Machining Lab	1,200 sf
TJDA-Pipe Joint	Plant #2	Above Machining Lab	Included in TJCU
TPDB-Pipe Insulation	Plant #2	Plant Manager's Office	100 lf
MFDC-9x9 Floor Tile & Mastic	Plant #2	Plant Manager's Office	10,500 sf
TJDD-Pipe Joint	Plant #2	Plant Manager's Office-Waiting Room	25 fittings
MFDE-12x12 Floor Tile & Mastic	Plant #2	Nurses's Office-Green w/White Streaks	2,000 sf
TJDF-Pipe Joint	Plant #2	Nurse's Office	2 fittings
TJDH-Pipe Joint	Plant #2	Corporate Gym	20 fittings
TPDI-Pipe Insulation	Plant #2	Corporate Gym	100 lf
TJDL-Pipe Joint	Plant #2	Roof Drain	500 lf
TJDN-Pipe Insulation/Wrap	Plant #2	Machine Shop-All Systems	5,000 lf
TJDO-Pipe Joint	Plant #2	Area 281-Steam Feed, Steam Return, Roof drain	3,500 fittings
TJDP-Pipe Joint	Plant #2	Center of Parts Area-Steam Line	Included in TJDO
TPDQ-Pipe Insulation	Plant #2	Steam Feed-Lake Water Supply Room	500 lf
TJEA-Pipe Joint	Plant #2	Chiller Room	50 fittings
TJEB-Pipe Joint	Plant #2	Men's Locker Room-North End	50 fittings
TJEC-Pipe Insulation	Plant #2	Men's Locker Room-North End	300 lf
TJED-Tank Insulation	Plant #2	Men's Locker Room-North End	100 sf
TJEF-Pipe Joint	Plant #2	Dried Line-Fan	20 fittings

OMC NONHAZARDOUS WASTE - 1999

Waste Description	Units	Quantity Disposed of in 1999	Disposal Facility
Oil Dri/Pigs/Debris	Gal	5,681	Pheasant Run RDF, Kenosha, WI
Davis Sludge	CuYd	27	Pheasant Run RDF, Kenosha, WI
Die Lube	Gal	606,214	Beaver Oil Company
Die Lube	Gal	30,464	Safety Kleen
Soap Solution	Gal	21,563	Beaver Oil Company
Soap Solution	Gal	5,500	Safety Kleen
Coolant Plant 1	Gal	48,165	Beaver Oil Company
Coolant Plant 1	Gal	5,886	Safety Kleen
Coolant Plant 2	Gal	5,419	Safety Kleen
Paint Permeate	Gal	5,827	Clean Harbors
Safety Kleen Solvent	Gal	8,382	Safety Kleen
Refractory Brick/ Mortar	CuYd	221	Pheasant Run RDF
Spent Carbon (Davis)	Lbs	18,000	Envirotrol Inc.
Ethylene Glycol	Gal	440	EOG Disposal Inc.

OMC RCRA HAZARDOUS WASTE - 1999

	Waste Code Nos.	Units	Quantity Disposed of in 1999	Disposal Facility
Gas / Oil / Water	D001	Gal	177,100	Beaver Oil Company, Hodgkins, IL
W/Water Treatment Sludge P1	F019 /D006	Cu Yd	20	US Filters, Roseville, MN
W/Water Treatment Sludge P2	F019/D007	CuYd	23	US Filters, Roseville, MN
Lyfanite Filters	D005/D006/D007	Gal	1,650	US Filters, Roseville, MN
Aerosol Cans	D001	Gal	300	Rineco, Arkansas
Paint Debris/Cans	F005	Gal	2,400	Rineco, Arkansas
Paint Sludge	D001/F003/F005	Gal	3,200	Rineco, Arkansas
Paint Filters	F005	Gal	6,000	Rineco, Arkansas
Paint Thinner MEK	F005	Gal	0	